1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

132 shores. Owing to the constant cold fogs in the beginning of summer and the heat-energy expended in melting the snow, the earth gets but little heated. More or less clear and comparatively warm days come not earlier than at the end of July and beginning of August. The soil, however, thaws out only to an inconsiderable depth.

[251] Regular observations with reference to this matter have hardly been carried on as yet, but all over that region the natives utilize a hole in the ever-frozen soil as a cellar in which to preserve their provisions. Slunin found a frozen layer of soil in the Gishiga tundra at a depth of 0.9 metres, and on the Stolbovoi tundra at a depth of from 0.36 to 0.54 metres.[1] Dittmar found in summer, near Gishiginsk, a thick layer of fossil ice at a depth of from 45 cm. to 60 cm.[2] On the Sedanke River he found the frozen soil at a depth of from 60 cm. to 90 cm.[3]

On the northern slopes of even very small heights, in gorges, or in rocky bays, the ice-glazed snow, hardened by the winds, melts only toward the end of August. The moist, moss-covered turf-layer of the tundra is another means by which the heat is prevented from penetrating deep into the soil. The rain-water and the water from the melting snow, which evaporates but very slightly, unable to penetrate the frozen soil, stagnate on the surface of the plain, forming extensive swamps, and rendering all communi-

[177] cation difficult or impossible during summer. Thus, from the beginning of May until the middle or end of October, the Russian settlement of Gishiginsk, as well as other settlements, is completely cut off from the Koryak villages and camps.

492 Communication between points situated at a short distance from one
484 another is carried on by the Koryak on foot, and by the Tungus by riding
177 their reindeer. The animals best adapted for use in moving from place to place in that swampy region would be pack-horses; but there are very few horses available, particularly in the Gishiga district. The Russian inhabitants of Gishiginsk owned in 1901 only about sixty-five horses, brought thither at different times from the Yakutsk Province. Though these horses are very hardy, they cannot long endure the journeying through the swamps, but wear out quickly, since they have only the scant green fodder upon which to depend. The Russians use them only for short-distance riding between their own settlements along the Gishiga River, or from the settlement Gishiginsk to the Tungus fairs on the Varkhalan and Nayakhan Rivers; and seldom during summer does a Russian merchant venture even to the nearest Koryak villages.

For getting over from Gishiga to Paren (Poitin) in the fall of 1900, I

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[1] See Slunin, I, p. 250.
[2] See Dittmar, Reisen in Kamtschatka, pp. 427, 431.
[3] Ibid., p. 483.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

succeeded in hiring twenty saddle and pack horses.[1] The distance from Gishiginsk to the Koryak village of Paren (about a hundred miles), which in winter is covered in two days when driving with dogs, occupied us eighteen days. It must be added, however, that the conditions were particularly unfavorable. After a very rainy summer the swamps were unusually deep, and, just before crossing the northern part of the Taigonos Ridge, we were suddenly overtaken by a violent snow-storm, which forced us to stop for three days. It so happened that the place where we stopped afforded only very poor pasture; and our horses, tired out by the journey of the preceding days, were completely exhausted.

Good fodder-grass is, as a rule, very rare in that region. The swamps are covered mainly with varieties of reed-grass (*Cyperaceæ*), horse-tails (*Equisetaceæ*), and ferns, which are not very nourishing. In civilized countries many of these grasses, which serve here as fodder for horses, are regarded as harmful for cattle. Thus the horses hardly managed to drag us up to the Koryak village. Of the horses which I sent back to Gishiga with a driver, six died on the way from the effects of a snow-storm, and six in Gishiginsk soon after their arrival in that place.[2]

It may be remarked in this connection that among the horse-tails, the preponderance of which among the pasture-grass frequently produces epizoöty even among the by no means fastidious cattle of northern Siberia, there are found some useful varieties. One species, *Equisetum scirpoides* Mich., is particularly liked by the Yakut horses. The horses of the arctic region fatten in two or three weeks on pastures covered with this variety of horse-tail. On our way from the Gishiga territory toward the Kolyma, in the fall of 1901, we came across an enormous pasture-ground covered with *E. scirpoides* at the source of the Gishiga River, and the Yakut asked me to stop there for a day in order to give the horses a chance to recuperate on that pasture.

VEGETATION. — Very few varieties of trees are represented in the Koryak territory. Of the coniferous trees there are two species, — the East Siberian larch-tree (*Larix Dahurica* Turcz)[3] and the shrub of dwarf cedar or stone-pine (*Pinus pumila* Pall.), which represents a certain variety of the Siberian cedar (*Pinus cembra* L.). Its seeds, small edible nuts, and cones, are the same as those of the Siberian cedar, from which they differ only in size. Dr. Slunin thinks[4] that the Siberian fir (*Picea obovata* Ledb.) is also to be

[1] This trip proved very advantageous. Had I waited in Gishiga for the winter roads to become passable, I should not only have lost two months, but I should also have missed the opportunity of seeing the autumnal religious festivals described in Part I, Chapter V, and which heretofore were unknown.

[2] See the Jesup North Pacific Expedition, popular account (The American Museum Journal, 1903, Vol. III, No. 5, p. 103).

[3] While the Siberian larch-tree (*Larix Sibirica* Ledb.) occurs west of the Yenisei River, the Dahurian larch-tree (*Larix Dahurica* Turcz) grows east of it (see Professor S. Korshinsky, The Vegetation of Russia, in The Russian Encyclopædia of Brockhaus and Efron, Vol. XXVII, p. 45).

[4] See Slunin, I, p. 306.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

is said that reindeer catch mice. I myself saw reindeer in our train eagerly seize the skin and other refuse of dried fish that had been thrown away by the drivers.

As I said before, the Reindeer Koryak do not like to roam about without their families;[1] but at certain seasons the herds wander far from camp, and compel the herdsman to follow them. This happens in winter, especially when the weather is exceedingly cold, and in summer, when communication by sledge is interrupted. The dwelling of the Reindeer Koryak then remains fixed in one place for two or three months; while the herd, after eating all the lichens near by, gradually moves farther away. The herdsmen at that time undergo great privations. In winter, food can be brought from the camp to the pasture in sledges, and the sleeping-tent can be transported in the same way; but in summer the herdsmen have to carry their food, bedding, teapots, and kettles. The herd is especially restless in the summer when annoyed by mosquitoes, and the herdsmen must watch day and night lest the reindeer scatter in all directions. Usually the old men, old women, and little children spend the summer on the bank of some river, fishing; while the other members of the camp, including ten-year-old boys and girls, wander about with the herd, assisting the herdsmen.

Sledge and Harness. — Plate xxiv, Fig. 1, represents the owner of a camp in a light sledge, about to leave his old camp; and Fig. 2 represents the front part of the train, ready for departure. The first sledge is occupied by one of the wives of the owner. Then follow other sections of the train. The rear is brought up by the herd with the herdsmen and grown-up boys. Some of them walk, while others drive in sledges drawn by a pair of reindeer or by one reindeer, and in which they ride to round up stray reindeer, and keep them with the herd.

This picture was taken early in April, and, as it shows, most of the reindeer still had their antlers, with the exception of the one in front, whose antlers were sawed off so that the woman could manage it more easily. Some of the reindeer had already cast one of their antlers. The males commence to cast the antlers at the end of November; but the geldings,[2] yearlings, and the barren does, cast their antlers in the month of April. Pregnant does cast their antlers from three to ten days after delivery.

Plate xxv, Fig. 1, represents the camp of a not very wealthy Reindeer Koryak in spring. The herd, consisting of four hundred reindeer, was rounded up to be moved with the camp to another place. The camp consisted of two tents, housing five families, including the owner of the herd,

[1] See p. 480.

[2] Brehm (Vol. III, p. 453, of the Russian translation) says that "the antlers of castrated reindeer always remain in the same position; that is, they preserve them if they happen to be castrated at a time the antlers were on, or they remain without antlers if they happen to be castrated just at the time they cast their antlers." No information is vouchsafed as to where the observation was made; but the error is probably due to the fact that geldings usually cast their antlers much later than normal bucks.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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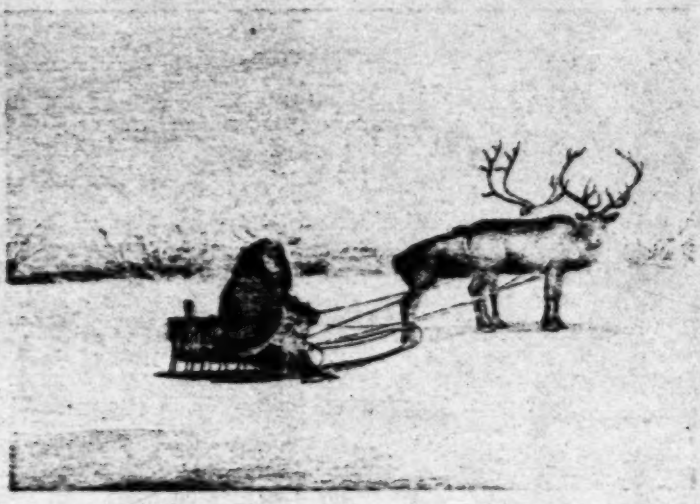

FIG. 1. REINDEER-SLEDGE.

FIG. 2. TRAIN OF REINDEER-SLEDGES.

[Facing p. 484 A]

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

his relatives, and herdsmen. Between the Koryak tents my own little tent was pitched. To move the entire camp required from forty to forty-five sledges. The moving of the camp of the Taigonos chief — who has a herd of five thousand reindeer, twelve herdsmen with their families, and three large tents — requires not less than a hundred and fifty sledges. The train is made up as follows: —

First comes the owner in a light sledge drawn by a pair of racing-reindeer. He drives fast, and leaves the train far behind. On the way he looks up pastures, and selects a halting-place. The sledges, loaded with household goods and tent-furnishings, each drawn by one reindeer, are conducted by women. One woman leads a train of seven or eight sledges. The first sledge, in which the woman-driver is sitting, is pulled by a gentle reindeer, usually one that belongs to the woman. This sledge is followed by a covered sledge for children. Next come sledges with clothing, dishes, provisions, bedding, and the tent-covers. The last sledge drags behind it the poles of the tent, since no reindeer follow it. The transportation of the driving-sledges is effected by placing them on top of the baggage in the freight-sledges.

Plate XXV, Fig. 2, shows a doe just after delivery (May 7), with the antlers still on.

A description of sledges and the points of distinction between the different kinds — such as racing-sledges, driving-sledges (men's and women's), family sledges, freight-sledges, and sledges for carrying the poles of tents — has been given by Mr. Bogoras.[1] Koryak sledges are in no way different from those of the Chukchee. The plan of construction is as follows: —

Instead of straight stanchions there is a series of arches or ribs, the ends of which fit into sockets in the runners, to which they are tied by means of leather strips passing through holes. On these arches, which stand upright and are parallel to one another, a long rectangular frame is placed, having longitudinal and transverse bars forming a grating. The frame is attached to the arches by means of thongs. In racing and riding sledges, these gratings are used as seats. In freight-sledges there is an upright grating all around, and a horizontal grating forms the bottom of the body of the sledge. As in the case of the Chukchee, the riding-sledge of the woman is somewhat larger than that of the man.

The dimensions of the riding-sledges which I collected on my expedition are as follows: —

	Man's Sledge.		*Woman's Sledge.*	
Length	216	cm.	228	cm.
Width	39	"	46	"
Height	28	"	37	"
Weight	17.5	lbs.	25	lbs.

[1] Bogoras, The Chukchee, Vol. VII of this series, pp. 89–92.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

493 171 The racing-sledge is so small and light that it can be lifted with one finger.

While the question as to the origin of reindeer-breeding among the Koryak and the Chukchee must for the present remain open, there is no doubt in my mind that the type of the Koryak-Chukchee sledge — with arches instead of pairs of stanchions, and with runners the fore-ends of which are curved upward and joined to the upper rails[1] — is of local origin. Nowhere is this type of sledge to be found, except among the Reindeer Yukaghir (the nearest neighbors of the Chukchee and the Koryak) and among the Yukaghirized tundra Tungus, between the Kolyma and Yana Rivers. The Yukaghir driving-sledges are not as carefully finished as those of the Chukchee and Koryak, and are somewhat higher than those of the latter; but this does not prevent the Yukaghir from riding astride the sledge, like the Chukchee and the Koryak.

The sledge which was described by Bogoras under the name of Tungus sledge.[2] I should rather call Yakut. I believe that the northern Tungus riders who have recently begun to use sledges adopted this type of sledge from the Yakut. This sledge is a combination of the ox-sledge of the southern Yakut and the northern dog-sledge. By its lesser length and greater width as compared with a dog-sledge, it resembles a Yakut ox-sledge; but in its stanchions, the thonged grating around the sledge, and the horizontal arch attached to the front parts of the runners, it resembles the dog-sledges. The northern Yakut also use these sledges in driving passengers with horses, or in drawing loads. The driver usually sits astride the horse, and from each side of the saddle a line runs to the front of the sledge.

● 492 171 Mr. Bogoras has pointed out the difference between the reindeer-harness of the Chukchee and the Koryak on the one hand, and that of the Yakut and the Tungus on the other. I wish to call attention here to the advantages of the harness of the latter. The Yakut always use two reindeer to a sledge, and therefore we must take for comparison the Koryak racing and driving sledges, which likewise are drawn by two reindeer. In the case of the Koryak sledges, both the reindeer to the right and the one to the left pull with the left shoulder, and the collar is slipped over each reindeer so as to take in its right fore-leg. The line running from the collar of each reindeer to the sledge, commencing at the right fore-leg, passes on the side of the reindeer by the right hind-leg, which remains on the left of the line. In the case of the Yakut, the reindeer to the right pulls with the right shoulder, — that is, the collar takes in its left fore-leg, — while the reindeer to the left draws like the Koryak reindeer. The angles of both collars are thus between the two reindeer, — on the right side of the left reindeer and on the left

[1] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 17 p. 90; and Plate XXIV, and Plate XXXIX, Fig. 2, of this volume.

[2] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 4, p. 70.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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side of the right reindeer respectively. These angles are joined, by means of a wooden or bone clasp, to the ends of a leather line which passes loosely through the front arch of the sledge. The Koryak and the Chukchee use a separate line for each reindeer, both of which pass from their collars to the sledge, and are firmly attached to the sledge-front. The Yakut harness offers the following advantages: —

It compels both reindeer to pull alike. If one of them pulls with greater strength, it will pull forward its end of the traces, and shorten the line of the other reindeer, whose hind-legs will then be struck by the arch of the sledge. This forces the lazy reindeer to make an effort and pull at its end of the traces equally with its mate. This kind of harness requires the reindeer of each team to be of equal strength. If the driver should not pay attention to this, the weaker reindeer would succumb. The stronger reindeer pulls out its arm of the traces; but the weaker one, unable to cope with the former, becomes still weaker the farther they proceed, until finally it drops from exhaustion. This happens quite frequently with inexperienced drivers.

When a train of freight-sledges using Yakut harnesses comes down a mountain-slope, the reindeer can swerve to both sides, — the right reindeer to the right, and the left one to the left, — and the sledges will come down by their own weight without striking the reindeer's legs. This is very important in using teams of two reindeer. In coming down a mountain-slope, the horizontal arch of the rear freight-sledge of the Yakut strikes the back of the front sledge with great force, and would crush the legs of the reindeer if they were unable to swerve to different sides. The Yakut reindeer of each succeeding sledge are tied separately, *with a line about a metre long*, to the rear end of the preceding sledge. The line passes from the halter. In the case of the Koryak, the freight-sledge is drawn by one reindeer, which can swerve to the left when going downhill.

The reindeer do not have to pull all the time with the same shoulder. As the Yakut always use two reindeer to a freight-sledge, the drivers frequently change the reindeer from right to left, and *vice versâ*.

In the manner of guiding the movement of the reindeer, the Koryak-Chukchee and the Yakut do not differ greatly. The reindeer is not directed with the bridle. In the team-harness of the Yakut there is only one rein, which is attached to the halter of the reindeer on the right side. The Koryak employ two reins in their team-harness, — one for each reindeer. The reins end in knotted loops, which are slipped on the left hand of the driver. To make the reindeer go to the right, it is necessary to pull the reins. However, it is principally the reindeer to the right that learns to change the direction and to pull his mate along. The halters of both reindeer are connected by a line about half a metre long. To make the reindeer turn to the left, the driver thrusts forward, along the side of the right reindeer

l:Jochelson E-5 (1900-01)1908 RY4 Koryak RY4

a thin pliable rod of willow, which takes the place of a whip. The right reindeer then, as though trying to avoid the blow, pushes the left reindeer to the left. The rod thus used as a whip has a length of from 120 cm. to 130 cm. (Fig. 64). It has a head of antler at the grip end, and a pointed ivory cap at the other, with which the reindeer is prodded on. The Yakut drivers use, instead of a whip, an ordinary pole from three to four metres long,

Fig. 64 ($\frac{1}{11}$). Reindeer-Whip. Length, 152 cm.

or a willow switch. When the driver thrusts the pole forward to the right of the reindeer, the latter turns to the left. As stated before, the Yakut use only a rein for the reindeer at the right. When the driver pulls the rein lightly, the right reindeer turns to the right, and pulls along the left reindeer. If the driver gives the rein a strong pull, the reindeer turns halfway round, and stops. At halting-points on the road, the driver thrusts the pole into the snow, and ties the rein to it. Then all the rear sledges of the train come to a stop.

In using the driving and racing sledges, the Koryak and the Chukchee drive sitting astride (see Plate XXIV, Fig. 1), while the Yakut sit sideways on the right side of the sledge. Plate XXIV, Fig. 2, shows a Koryak woman leading a train of sledges, and sitting sideways, like the Yakut driver, because she happens to be in a freight-sledge having a grated railing. As a rule, however, a young woman prefers to lead a train of sledges driving her own smart driving-sledge drawn by a pair of her own reindeer.

Management of Reindeer-Herds. — To pick from a large herd a number of a certain kind of reindeer is a very troublesome task. This must be done, for instance, when reindeer have to be given away with a daughter who is marrying into a strange camp, or when relatives or neighbors who kept reindeer in one herd separate to leave for different places, or when, in spring-time, the owner of the herd takes the pregnant does to a separate pasture.

Whenever this has to be done, all the herdsmen, as well as boys, girls, and children, get together. The scattered herd is collected and driven to one place, where it is surrounded by a chain of watchers, who do not allow the reindeer to disperse. In order not to frighten them, the watchers sit on their heels; but, whenever the reindeer attempt to break through the chain, the watchers jump to their feet, and stop the flight. In the midst of the herd is the owner of the reindeer, who intends to remain on the place, with some assistants. They capture their reindeer one by one with lassos, and tie one front-leg of each one to the corresponding hind-leg by means of a

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

233 433 and skins. The fawns are generally slaughtered in the fall, when they are from five to seven months old. The skins are used for clothing, and are in great demand for barter. Further slaughtering of grown reindeer in the winter by the owners for their own consumption, and for food for the Maritime Koryak and the inhabitants of Russian settlements, affects very unfavorably the growth of the herd. That is why there are so few owners of large herds among reindeer-breeders. Some herd-owners have become impoverished because the Russian officials compelled them to sell large numbers of reindeer for the Russian settlements in times of famine. The smaller a herd is, the more its growth is affected by the slaughter of the reindeer.

After all has been said, the great drawback to the growth of reindeer-herds is the frequent occurrence of epidemics, which, in a few days, may pauperize a rich reindeer-breeder. Detailed information on epidemics and diseases of reindeer has been given by Mr. Bogoras.[1]

It goes without saying, that the Yakut herds are not immune to epidemics; but in other respects the growth of the Yakut herd is much faster. Many Yakut in the Verkhoyansk district who but a comparatively short time ago purchased a few dozen reindeer from the Tungus, and engaged in their propagation, are now wealthy reindeer-breeders.

511 233 433 The Koryak reindeer-breeder has not passed as yet beyond a primitive economic stage; that is, all that he needs for living he derives from his herd. Although the herd of the Koryak may be said to constitute his capital, in so far as the labor of hired herdsmen furthers the accumulation of that capital, the only benefit which he derives from the exchange of reindeer for other things is the acquisition of articles to satisfy the current needs of the family. Under such conditions, the profit derived from a Koryak herd is insignificant. A large number of reindeer are slaughtered annually, — that is to say, part of the wealth is destroyed, — and in exchange for that, the reindeer-breeder seldom gets anything that will serve him for any length of time. We have here a case of most primitive barter.

171 436 492 [495] As opposed to the Koryak, the Yakut reindeer household is founded on a money basis. The reindeer serve here, not only as an article of barter for goods necessary in the household, but as a source of earnings. The income derived from the maintenance of post-stations and the transport of goods is very considerable, and is received in money. Wealthy Yakut herd-owners have considerable capital, and even send deposits to banks. Communication over the entire length of the Government trail from the Aldan River, south of the Verkhoyansk mountain-ridge, to Sredne Kolymsk (a distance of 1350 miles) and over all branch-trails leading from that principal trail, is kept up by the Yakut in winter with reindeer, and in summer on horseback. This

[1] Bogoras, The Chukchee, Vol. VII of this series, pp. 80, 81.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

explains why the herd of a Yakut constitutes capital in the real sense of the word, and why the income derived from it, as well as its value, is considerably greater than anything the Koryak can realize.

For carrying my collections from Sredne Kolymsk to Verkhoyansk (a distance of 928 miles) I paid my Yakut driver five rubles per pood (sixteen kilograms). For great distances a sledge drawn by a pair of reindeer is loaded with from five to seven poods.[1] Thus, in twenty-five days, the time it takes reindeer to carry a load the distance between the two points just mentioned, each pair of reindeer earned for its owner from twenty-five to thirty-five rubles, with no expense attached, except the small pay of the driver.

One driver is supposed to take care of from eight to ten sledges. He drives the reindeer attached to the first sledge, while each of the other teams is tied to the preceding sledge. The first sledge, carrying nothing but the driver and his provisions, is drawn by the most docile reindeer, yet they must be very strong animals. Quite frequently the reindeer in the rear — either because they are not used to the harness, or through laziness or exhaustion — refuse to go and pull back; while the reindeer in front, prodded by the pole of the driver have to drag them on and force them to go. It often happens that when the reindeer are tired, all the rear reindeer lag, while the front pair are compelled to draw the entire train. Sometimes one or more reindeer in the train fall from exhaustion, and the front pair of reindeer drag them along on the snow until they are compelled to get up. If, at such times, the front pair become exhausted, the driver substitutes others, and hitches the former to the last sledge.

When the reindeer are exhausted or very tired, they begin to pant, and lie down on the ground and no amount of beating will induce them to get up. It frequently happens that the exhausted reindeer fall dead. In my travels with post-reindeer, which are usually over-driven, my reindeer would fall by the wayside, exhausted or dead. If a reindeer lies down so that it cannot be raised, the driver unhitches it, and leaves it. If it should recover, he will pick it up on his return-trip.[2] It frequently happens that wolves devour such abandoned reindeer.

I remember that, at one station in the district of Kolymsk, the keeper harnessed to my train teams composed of Yakut and Chukchee reindeer. The latter he had purchased from the Chukchee to make up for the loss of station-animals. In spite of the fact that they were fat and strong animals, the Chukchee reindeer, being unaccustomed to fast driving, could not long

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[1] For short distances a pair of Yakut reindeer can carry from nine to twelve poods.

[2] The distances between post-stations on the lonely polar trails vary from sixty to four hundred versts (40 to 265 miles). According to the rules governing post-stations, the reindeer must make fifty versts (thirty-three miles) per day. The same set of reindeer cover the entire distance between the stations.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

keep up with the Yakut reindeer, and soon began to pant and fall, in spite of severe beating. We abandoned them one after another, leaving on the trail a few sledges with provisions, and finally reached the station on foot. The Chukchee reindeer were the usual little-trained draught-animals, which made from seven to ten miles a day in nomad trains, walking at an easy gait the entire distance.

COMPARATIVE REMARKS. — In conclusion I wish to sum up the chief peculiarities of the three types of use of the reindeer.

The domestication of the reindeer of the Koryak-Chukchee is very primitive. The economic conditions are still in the simple stage in which the herd serves merely to satify the wants of the family. Its principal object is to serve as a source of supply for food and clothing, the reindeer being kept mainly for slaughter. Transportation is but a secondary purpose of the reindeer.

The Tungus reindeer represent a more advanced type. Their chief use is as a means of transportation over the hunting territory, both as riding and pack animals. The household of the wealthy Tungus herd-owner approaches either the Koryak or the Yakut type, according to its location.

The Yakut reindeer are an improved Tungus race. Their principal use is commercial. They are the chief source of money earnings. The owners of one or two dozen reindeer seldom use them for their own household, but hire out themselves with their teams for the transportation of merchandise; or they rent their reindeer to Yakut contractors for a money consideration.

THE DOMESTICATION OF THE WILD REINDEER. — To what has been said on p. 471 concerning the possibility of taming wild reindeer I wish to add the following remarks.

It has been said that the Amur Tungus domesticate wild reindeer. I consider these reports, which are confirmed by my friend Mr. Sternberg in his review of Bogoras's work on the material culture of the Chukchee,[1] worthy of little credence. If the Amur Tungus could increase their herds by taming wild reindeer, they would surpass in skill the tamers of our zoölogical gardens, who succeed only to a certain degree in taming wild animals. In a personal talk with me on this subject, Dr. Sternberg told me that in the original draught of his manuscript he had written "enticing" instead of "taming," which might refer to the skill of the Tungus in enticing wild reindeer with the help of specially trained domesticated animals. This I know is done also by the Tungus of the Province of Yakutsk, and of the Gishiginsk and Okhotsk districts of the Maritime Province; but in those places it applies only to hunting wild reindeer, and not to capturing them for purposes of taming.

In the districts named, three ways of hunting wild reindeer with the

[1] American Anthropologist, N. S., Vol. VII, 1905, p. 322.

Jochelson E-5 (1900-01) 1908 Ry4 Koryak RY4

VI. — DOG-BREEDING.

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The Beginnings of Dog-Driving, and its Former and Present Extent. — No doubt the dog was domesticated long before it was used for driving. According to a tradition recorded by me in the village Itkana, the use of dogs for driving, among the Koryak, began as follows. Once upon a time some children who were playing with a dog tied it to a wooden chamber-vessel (oča'lyo). The dog dragged the vessel along. "Ah," said the people, "it can draw!" and they hitched the dog to a sled.[1] This tradition points to the fact that in the memory of Koryak now living a reminiscence has been preserved of the time when the dog, though already a domesticated animal, was not employed for driving-purposes.[2]

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According to the statements of early travellers and writers, like Marco Polo and Witsen, dog-driving in western Siberia was formerly employed much farther to the south than it is now. As stated by Witsen, at the time when he wrote (1785) there were no horses in the northern parts of the Yenisei district, but only dogs; and even near Tomsk horses were used in summer for driving, and dogs in winter.[3] Later on, the horse supplanted the Siberian driving-dog, and in the extreme north it found its competitor in the Arctic reindeer. In more southerly latitudes the dog has held its place as a driving and draught animal only in the southeastern part of Siberia, in Kamchatka, on Saghalin Island, and in the Amur region. In the well-known expedition to the Yugra country in 1499 the Russian Army was accompanied, according to Lehrberg, by hundreds of dog-sledges.[4] The same writer states that in former times dog-driving was in use west of the Ural Mountains in the government of Perm. Middendorf supposes that in Europe the driving-dog was superseded by the horse in antiquity, probably in prehistoric times. He

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[1] Steller (p. 133) quotes the tradition of the Kamchadal, according to which their creator Kutka did not hitch up dogs, but dragged the sled himself.

[2] It is interesting to note that in Koryak mythology reindeer-driving as a sign of wealth is contrasted with going afoot as an indication of poverty (see Part I, pp. 253, 281, 283), but not with dog-driving. In my judgment, it cannot be inferred from this that the Koryak dog was not used for driving until after the reindeer had been tamed. In the first place, the dog is the most ancient domesticated animal, and, besides, it was very easy to teach it to draw a sled; in the second place, primitive imagination, as well as the most modern, employs extreme situations to enhance contrast, unwittingly or purposely disregarding intermediate conditions that do not bring out the contrast so well. In one myth (see Part I, p. 210) Big-Grandfather asks his daughters to give him some soup for feeding the dogs. He goes out and calls the dogs, and the reindeer which have carried off the Fog-Man turn into dogs and run back to the trough with their sled. From this myth it may be concluded that the creator of the Koryak world is conceived of as having driving-dogs.

[3] See Middendorf, II, p. 520.

[4] See Lehrberg, Untersuchungen zur ältesten Geschichte Russlands: 1. Ueber das Yugrische Land (St. Petersburg, 1816), p. 17.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

also thinks that the expression "pennikorm" of the Baltic Provinces (which means "a dog's load"), which is used instead of "geographical mile", recalls the vanished custom of dog-harnessing.[1] We find, of course, in many European countries at present, also the use of draught-dogs harnessed to small carts. I observed it in Germany, Switzerland, Belgium, and Holland. Milkmen, green-grocers, tradesmen, artisans, distribute or bring their products to market in carts to which are harnessed one or two dogs. The driver, man or woman, helps them draw. But this particular, limited use of dogs as draught-animals is quite different from the breeding and harnessing of dogs of the Siberian tribes, to whom the dog furnishes the only means of communication and transportation. It is possible, however, that the present use of the dog in harness in Europe may be regarded as a relic of a more extensive use of the harnessed dog in antiquity.

Considering the available data concerning the former extent of dog-driving in the West, we are forced to the conclusion that the changes in the manner of harnessing and driving dogs among the dog-breeders of eastern Siberia, which have taken place in historic times, occurred under the influence of Russian invaders, who had been familiar with dog-driving previous to their meeting with the East Siberian tribes.

I have remarked before that the region in which dogs were used as draught-animals has narrowed down to a certain degree, owing to the introduction of the reindeer. Most of the Siberian tribes engaged in dog-breeding, like the Ostyak, Samoyed, Tungus, Yukaghir, Chukchee, and Koryak, employ also the reindeer to such an extent that in many cases a large portion, sometimes even the majority, of the tribe, are engaged in reindeer-breeding. The tribes which formerly did, and do now, use only dogs as draught-animals, are the Ainu, Gilyak, and Kamchadal in Asia, and the Eskimo and Indians of northwestern America. The Russians now living in hamlets in the Far North (principally near the mouths of rivers) and in the extreme east of Siberia also use dogs exclusively for hauling loads and for travelling. In a few localities these Russians, who are fishermen, possess a small number of horses for riding in summer, but none of them have taken up reindeer-breeding, — an occupation conflicting with the sedentary habits of their former home.[2] In the north of the Yakut Province a few Russians own small herds of reindeer, but the herds are under the care of Tungus.

Both the modern driving-dog of Siberia and that of northern America belong to the same wolf-like race of domestic dogs. Middendorf supposes that it represents a cross between a wolf and jackal.[3] Schrenck, too, considers

[1] Compare Middendorf, II, pp. 519, 520.
[2] See the ethnographic map in Part I for Russian hamlets in the extreme northeast of Siberia.
[3] See Middendorf, II, p. 527.

1: Jochelson E-5 (1900-01) 1908 RV4 Koryak RV4

231 the Eskimo dog as related to that of Asia. He thinks that the dog of northern North-America has reached there from the Old World.[1]

171 Except for its smaller stature (the average height at the fore-legs is between 50 cm. and 75 cm.) and more varied color, the dog is, on the whole, hard to distinguish from the polar wolf. Though a considerable percentage of dogs are of a uniform light or dark gray color, like that of the wolf, many of white color and black color occur; but particularly numerous are the piebald dogs, with white or black spots on their legs, chest, and sides. West of the Stanovoi Ridge more piebald dogs are found than near the coasts of the Sea of Okhotsk. For instance, along the Indighirka the majority of dogs that I saw were piebald, with white and black spots. This, in all probability, must be the result of intercrossing of the native dogs with the Tungus hunting-dog, which resembles the shepherd-dog, or with the dogs imported by the Russians. This may also explain the fact that on the Lena, among the Yakut dogs, I sometimes saw specimens with drooping ears. On the other hand, from crossing the driving-dog with the Tungus dog, which is smaller in size, there results a small fox-like type, with pointed snout, small erect ears, and bushy tail. Such dogs I met frequently on the Kolyma River. They very much resemble foxes, especially those with reddish fur. When in good humor, they turn their bushy tail upward; but when tired or disgruntled, they drop it and drag it, as foxes do. Then the round pupils of the eyes alone distinguish this dog from a fox.

492 171 The present method of driving dogs employed by the Koryak is identical with that used by the Russians and natives of ...stern Siberia, and particularly also with that used by the Chukchee, which has been described in detail by Bogoras.[2] Therefore I shall point out here only a few peculiar traits of dog-breeding among the Koryak, and its relation to their domestic economy. I shall also give some additional information relating to the distribution and types of dog-breeding in Siberia.

HARNESS. — To the three types of dog-harness mentioned by Bogoras, two others may be added, — the modern Gilyak and the ancient Kamchadal type. Thus we find the following five types: —

1. *The West Siberian Harness.* — It consists of a round strap encircling the dog's body like a belt across abdomen and back (Fig. 65). From the lower part of the belt, where the ends of the belt-strap are joined by means of a toggle, a trace runs between the hind-legs of the dog. Around this trace is wound some soft material, usually a piece of fur, to protect the legs of the animal. Thus the dogs are made to pull with their haunches. In describing the West Siberian dog-harness, Middendorf says that a small strap runs from the upper part of the harness, over the loins, to the main line, to

[1] See Schrenck, II, p. 167.

[2] See Bogoras, The Chukchee, Vol. VII of this series pp. 98—114.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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prevent the harness from slipping back upon the legs.[1] From Middendorf's description it does not appear whether he personally handled a West Siberian harness on the Yenisei River or a harness in use to the east of the Lena. I may add here that during my sojourn at the mouth of the Lena in 1897 I had occasion to see dog-breeders that came there from the Khatanga and Anabar Rivers, both west of the Lena, who had the same harness as is now found everywhere east of the Lena.[2]

Fig. 65. West Siberian Dog-Harness (from Nordenskiold, I, p. 353).

2. *The East Siberian Harness*, also employed by the modern Koryak, consists of a long loop of skin (Fig. 66), the ends of which are united by a little strap terminating in a toggle, which is inserted in one of the rings of the main line. The loop is made of a piece of skin two or three fingers wide. The sides of the loop are united by means of one or two cross-strips of leather which go over the back of the dog. The dog is put

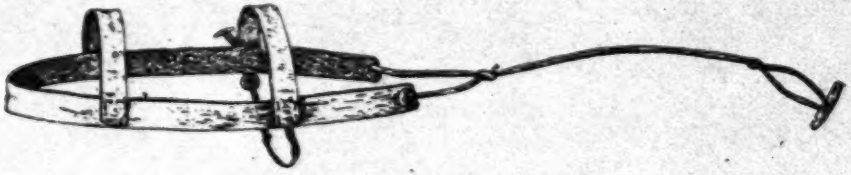

Fig. 66 ($\frac{3}{11}$). East Siberian Dog-Harness.

into harness by passing its head through the opening between the top of the loop and the first cross-strip. At one side of the harness a small strap is sewed on, which serves as a belly-band. It passes under the dog's belly, and is fastened with a wooden or bone toggle to the loop on the other side of the harness.[3] Thus this type of harness resembles the Russian horse-harness. The top or the breast-piece of the harness, by which the dog pulls, rests on the chest;

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[1] Middendorf, II, p. 521.

[2] From the statement made by Middendorf (Footnote 3, p. 521), it may be inferred that in his time both kinds of harness were known on the Yenisei. He says that the Yenisei Yakut used to call the back-harness "Russian harness" (nuča'-alyggə'), and the chest-harness "Yakut harness" (mxx'-alyggə'). Judging from the name, Middendorf conjectures that the back-harness came to Asia from Europe.

[3] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 25, *a*, *d*, p. 108.

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but often the band across the back is too short, or in driving the breast-piece of the harness slides upward, despite the belly-band, and the breast-piece comes to rest above the chest, so that the dog pulls with its neck, thus making breathing difficult. This is the principal inconvenience of this type of harness.

3. *The Eskimo Harness.* — Murdoch[1] describes this harness (Fig. 67) as follows: "The dog-harness consists of a broad strip with three parallel loops at one end. The head is passed through the middle loop, and a fore-leg through each of the side-loops, bringing the main part of the thong over the back." In a similar way Parry[2] and Nelson[3] describe the Eskimo dog-harness. The dog-harness of the Central Eskimo is constructed on the same principle. "It consists of two bights passing under the fore-legs. They are joined by two straps, one passing over the breast, the other over the neck. The ends are tied together on the back, whence the trace runs to the sledge."[4] From these descriptions it is clear that the Eskimo dog pulls partly with its shoulders, but mainly with its chest. Furthermore, the breast-bight or breast-piece cannot slip up, as is the case with the East Siberian dog-harness, and therein lies the advantage of the Eskimo dog-harness over all the others. The Asiatic Eskimo seem to use a dog-harness similar to that of the Central Eskimo; but in the illustration of the dog-harness of the Asiatic Eskimo, given by Mr. Bogoras,[5] the breast-strap joining the two bights for the fore-legs is not seen, so that it appears that the dog pulls with the shoulders only.

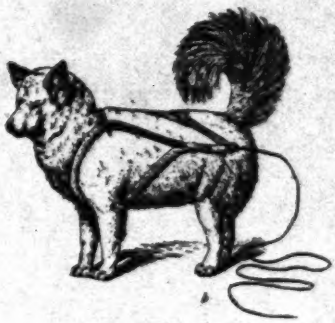

Fig. 67. Eskimo Dog-Harness. (From F. Boas, The Central Eskimo, Fig. 487.)

4. *The Amur Harness.* — This type of harness (Fig. 68) is very simple and primitive, consisting as it does of only one loop, which is put over the dog's head, in the form of a loose collar, so that the dog pulls with its neck exclusively.[6] In this respect the Amur harness differs, disadvantageously, from all others. Under great exertion or excitement, says Schrenck,[7] the dog is easily subject to suffocation. This dog-harness is used by the Ainu on

[1] The Point Barrow Eskimo, p. 538.

[2] See Parry, II, p. 517.

[3] Nelson, The Eskimo about Bering Strait, p. 209.

[4] See Boas, The Central Eskimo, p. 532, and Fig. 487 on p. 532.

[5] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 20, A, p. 98.

[6] See Schrenck, II, pp. 172, 173, Plate XXXVI, Figs. 2, 3. Sternberg (American Anthropologist, N. S., 1905, Vol. VII, p. 324) has pointed out the error into which Bogoras has fallen (owing to the indistinctness of several of Schrenck's illustrations) by classing the Gilyak harness with the modern type of Kamchadal harness (Bogoras, The Chukchee, Vol. VII of this series p. 109).

[7] Schrenck, II, p. 173.

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Saghalin, the Gilyak, and the representatives of Tungus tribes on the Amur River, who have learned dog-driving from the Gilyak.[1]

5. *The Ancient Kamchadal Harness.* — The modern Kamchadal dog-harness (Fig. 69), named "oblique harness" by Bogoras, differs from the usual East Siberian type in that it is shorter, has only one band across the back, and has no belly-band;[2] but, judging from Krasheninnikoff's (1733—43) and Dittmar's (1851—55) description, the Kamchadal of their times used for harnessing dogs simple collars or loops like those of the Gilyak, without cross-straps; but the manner of putting them on was like that of the Yakut reindeer-collars,[3] which on the right-hand animal are put over the head and the left fore-leg, so that it pulls with the right shoulder and in part with the chest, while the left-hand animal has its head and right fore-leg in the collar, and pulls with its left shoulder.

I find that among the five types of dog-harness here mentioned, that of the Eskimo is most effective. Next to it, the most practical is the ancient Kamchadal harness, which, in simplicity, even surpasses that of the Eskimo. The East Siberian harness occupies an intermediate place between the Eskimo and the Amur types, the former of which requires the dog to pull with the chest, the latter with the neck. The Amur and the west Siberian harnesses are burdensome for the dog, each in its own way. The former also prevents fast driving; the latter is a torture to the dog when drawing a load.

The question now arises, to which tribe does the

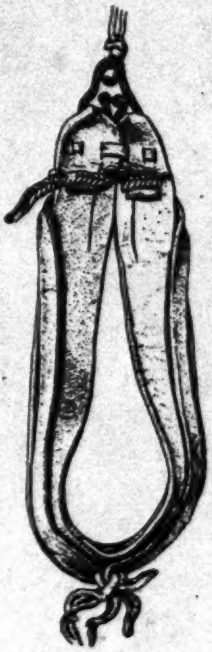

Fig. 68. 1/11 *c.* Amur Dog-Harness.

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[1] Schrenck, II, p. 175.

[2] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 25, *a*, p. 108; also Tushov, "Along the Western Shore of Kamchatka" (Memoirs of the Imperial Russian Geographical Society, Vol. XXXVII, No. 2, St. Petersburg, 1906, pp. 77, 78; Figs. 12, 13).

[3] See before, p. 487, and Krasheninnikoff, II, p. 79. I will here translate Krasheninnikoff's own words, as his obsolete Russian and his inexact expressions, coupled with the absence of illustrations, may lead to misunderstandings: "The loops (collars) are made of broad straps, soft and folded double, which are put on the dogs over the shoulder-blade, — over the left shoulder-blade of the right-hand dog and the right shoulder-blade of the left-hand dog." This means that the left shoulder of the right-hand dog is in the loop, and it pulls with its right shoulder, and *vice versâ* in the case of the left-hand dog. That this description must be understood exactly in this way, may be seen from the passage in which Krasheninnikoff describes the Koryak harness of a pair of reindeer: "The loops by which the reindeer pull are like those of dogs: they are put on both reindeer over their right shoulder-blades" (Krasheninnikoff, II, p. 210); i. e., both reindeer pull with their left shoulders, as I have described before (p. 486). Dittmar's description is much clearer. He says, "Jeder Hund trägt nämlich beständig einen festen ledernen Halsriemen mit einem daran hängenden Haken und alle Enden der Anspannriemen verlaufen in eine weite lose Schlinge durch die der Kopf und ein Vorderbein des Hundes gesteckt werden, während die Haken der Halsriemen in die Wiederhaken der Schlingen eingreifen. Die Hunde ziehen also mit dem Nacken und der Brust,

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174 The question now arises, to which tribe does the
492. invention of the harness described here as the East Siberian type, which is used at present by the Koryak, belong? We do not know the type of harness used in olden times by the Koryak and Chukchee. It is likewise unknown what type was used by the Yukaghir who lived between the Lena and the Kolyma Rivers. I am inclined to think that the primary East Siberian dog-harness i. e., that of the native dog-breeders of East Siberia — consisted of one single bight like that of the Gilyak or Kamchadal, but that the Russian immigrants changed it by adding to the single bight back-bands

Fig. 69 ($\frac{1}{11}$). Modern Kamchadal Dog-Harness.

and a belly-band, and that the natives afterwards adopted from the Russians the harness modified in that way. The following considerations support this hypothesis.

The East Siberian dog-harness, with its cross back-straps and belly-band, recalls as I stated before, the back-straps and belly-band employed in the Russian horse-harness;[1] the Kamchadal have adopted the East Siberian harness from the Russians; and the Russians, not only all over eastern Siberia, but even on the Amur River,[2] employ this harness, evidently imported by them, and not that of Gilyak type. That the Yakut, according to Middendorf's statement, called the East Siberian type the Yakut harness, does not at all argue that it was actually invented by the Yakut, the northern branch of whom became dog-breeders very late. Their word for "dog-harness" (a'lyk)[3] is not a Yakut word, but the Russians of various Siberian localities designate the dog-harness by this term.

I think that the Eskimo harness too, with three bights, is an improved type developed from the single-bight harness. The latter can be easily cast off by the dog, or it slipps off[4] — a great inconvenience — in driving over

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wodurch sie die grösste Zugkraft entwickeln können" (see Dittmar, Reisen in Kamtschatka in den Jahren 1851–1855, p. 161).

[1] It is interesting to add here that the West European dog-harness for pulling carts is of the East Siberian type; i. e., the type is, as I suppose, of Russian origin. The only difference between the West European and the East Siberian dog-harness lies in their back parts. While the East Siberian dog-harness ends with one trace, which is fastened to the main line, the West European dog-harness ends in two traces, — one on each side, — which are fastened to the ends of a whiffletree, as in a double horse-harness. The shape of the back part, and the manner of attachment to the main line, are another inconvenience of the East Siberian dog-harness; for the dog must run somewhat obliquely in order to draw with the chest, and this fatigues the dog extremely.

[2] See Schrenck, II, p. 173.

[3] See Footnote 2, p. 505, alygge' = alyk + ge; -ge is the possessive suffix.

[4] It may be noted here, that, according to Dittmar's description, the former Kamchadal single-looped dog-harness was also prevented from slipping off by fastening the breast-piece to the dog-collar (see p. 507, Footnote 3).

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snowdrifts, over hummocky ice, and rough ground, where the long traces of the Eskimo harness may catch.

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The Koryak make the dog-harness of hide of the thong-seal (*Erignathus barbatus*), as well as of bear-hide. On the Kolyma, dog-harness is also made of ox, horse, and elk hide.

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There is no information to the effect that dogs have been used in the Old World as beasts of burden; but, according to Klutschak,[1] the Eskimo sometimes use dogs for carrying packs when sledge-driving becomes difficult or impossible. The dog of the American Indian is also used as a beast of burden. I have heard that prospectors in Alaska use the dog in the same way.

Methods of attaching Dogs to the Sledge. — Like the Russians of eastern Siberia, the Koryak nowadays harness the dogs in pairs, one dog on each side of a long stout main line (Plate xxvi, Fig. 1; see also Fig. 183). Probably this method has also been introduced by the Russians to facilitate fast driving, since in this way many dogs can be harnessed to the sledge. Judging from certain survivals of former harnessing, the natives of Siberia, who harness dogs tandem, formerly used to attach them to the main line singly, and alternately on the right and left of the trace. The Yukaghir of the Upper Kolyma harness dogs that way even now; and the same is done by the Koryak when transporting household effects from the winter to the summer dwelling, and *vice versâ*, if their dogs are few in number. According to some statements, the Koryak in olden times did not drive fast. They harnessed few dogs to the sledge, and the driver himself helped to pull or push the sled, as the western Eskimo do. The Koryak often do so even now when moving from their winter houses to their summer quarters. To avoid the trouble of loading and managing a sledge drawn by a small team, the Koryak, who have few dogs, often walk from village to village, if these are not too far apart, carrying their goods in a bag on the back. In olden times walking was more in vogue than it is now.

According to Schrenck's description, the Gilyak, like the Yukaghir of the Upper Kolyma, attach the dogs at equal distances apart, alternately on the two sides of the main line,[2] and there are only few dogs (about six or seven) in a team; while the Russians on the Amur attach the dogs in pairs,[3] with the exception of the first (the leader), which may be single, the team consisting of from five to seven pairs. This latter method is used by the Russians all over East Siberia. According to Krasheninnikoff, the Kamchadal of his day would usually harness only four dogs to a sled, but would attach them alternately or in pairs.[4]

The Eskimo generally attach the dogs so that the traces of each dog

[1] Klutschak, Als Eskimo unter den Eskimo (Wien, 1881), p. 83.
[2] See Schrenck, II, Plate xxxvi, Fig. 2, p. 172.
[3] Ibid., p. 173. [4] See Krasheninnikoff, II, p. 77.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

DOG SLEDGES.

The Koryak.

[Facing p. 509]

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492 run directly to the fore-part of the sled. The line of one dog (the leader),
171 being somewhat longer, enables it to keep ahead; while the others, in running, are arranged like a fan. According to Bogoras,[1] this method of harnessing was still in use on the Chukchee Peninsula in the middle of the last century. On the other hand, the Eskimo about Bering Strait now employ both the Asiatic and the American methods of harnessing; i. e., tandem and fan-like,[2] having evidently adopted the former method from the Chukchee, or rather from the Russians in Alaska. At Point Barrow the Eskimo, too, now employ the Asiatic method of harnessing. As Murdoch[3] states, "the dogs are attached in a long line, alternately on opposite sides of this trace, just so far apart that one dog cannot reach his leader when both are pulling;" i. e., as the dogs are attached by the Yukaghir of the Upper Kolyma, the Gilyak, and in many cases by the Koryak. The Eskimo about Bering Strait, in employing the tandem method, attach single dogs alternately, or in pairs if there are more than three dogs.[4]

493 THE SLEDGE. — The sledge now employed by the Koryak for dog-driving
174 is of the same type as that in use in the whole of northeastern Siberia, but chiefly among the Russians. This sledge, with its three or four pairs of vertical stanchions, with a horizontal front bow tied to the upturned runners, and with a vertical bow at the first pair of stanchions and a netting of thongs on the sides and in the back, is also in use among the modern Chukchee, and has been described in detail by Bogoras.[5] We do not know now what was the original type of the Koryak dog-sledge, but doubtless it was not the sledge above described. The ancient Chukchee dog-sledge had "curved ribs, similar to the reindeer-sledge."[6] The ancient dog-sledge of the Kamchadal[7] also had curved ribs. Accordingly there is no ground for assuming that the Russians adopted from the Koryak the above-described type of sledge with vertical bow. In Steller's time there were already in use in Kamchatka two types of sledges;[7] namely, the ancient Kamchadal sledge with curved ribs, and the present *narta* imported by the Russians. As with the dog-harness, so also with the East Siberian dog-sledge, I think that in its fundamental form it is a type of dog-sledge of some native tribe, most likely the dog-breeding Yukaghir, with whom the Russians fell in on the rivers Yana, Indighirka, and Kolyma, far back in the first half of the seventeenth century.[8]

[1] See Bogoras, The Chukchee, Vol VII of this series, p. 98.

[2] See Nelson, The Eskimo about Bering Strait, p. 209.

[3] See Murdoch, The Point Barrow Eskimo, p. 358.

[4] See Bogoras, The Chukchee, Vol. VII of this series, Fig. 21, pp. 104—106. It should be added, however, that our information concerning the method of harnessing and dog-driving of the Maritime Chukchee of the Arctic Ocean between Cape Erri and East Cape is as yet incomplete.

[5] See Bogoras, The Chukchee, Vol. VII of this series, p. 99.

[6] See Steller, p. 370; Krasheninnikoff, II, p. 78; Bogoras, The Chukchee, Vol. VII of this series, p. 93.

[7] See Steller, p. 370.

[8] The Cossacks founded the town Verkhoyansk on the Yana River, and reached the Indighirka as early as 1639. Since then the Russians have been improving the local means of transportation.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

But the Russians considerably improved upon the native type, and then carried it to Kamchatka, the Koryak, Chukchee, and to the Russian settlers on the Amur. Part of the Yakut, who became dog-breeders but lately, have also adopted this type of sledge. Its structure, dimensions, and firmness are well adapted for fast driving, for carrying heavy loads, and for making long journeys, — conditions of which the primitive tribes of Siberia had no need, or much less need than the Russian conquerors, — at first for military campaigns, and later for mercantile transports, the conveyance of officials and priests, and for carrying scientific expeditions. For the transportation of passengers the sledge had to be made long, with a comfortable seat in the rear,[1] and room in front for the driver. I also think that the vertical bow of the sledge is a Russian invention. When jumping off the sledge during the journey, either to run for a while or to urge the dogs along, the driver does not let go of this bow. If he should, the dogs, on scenting game, or aroused by something else, might suddenly run away, leaving the driver in the wilderness. This danger is great when the number of dogs in harness is considerable and the sledge is without freight. Once when I myself drove a team of dogs and got off to adjust the sledge, the dogs suddenly ran away and left me alone. Luckily there was a village seven kilometres away, where the dogs stopped, while I escaped with no more serious result than having to walk this distance in heavy travelling-clothes.[2] The Yukaghir of the Upper Kolyma, who have few dogs, and who are in the habit of helping them to draw the sledge, use no vertical bow. In travelling over the Yukaghir territory on the Upper Kolyma River, I could make no use of Yukaghir dogs. They are unfit for fast driving with passengers and heavy freight. I had to hire horses from the distant Yakut villages. The Yukaghir themselves, in their wanderings, go on foot or on snowshoes. Only children and the sick sit on the sledges. But whenever I had to make short journeys, and it was inconvenient to send for Yakut horses, the Yukaghir, in order to carry me some five or ten miles, would combine the dogs of two or three households into one team. I would sit on the sledge alone, without a native driver. One Yukaghir on foot, — sometimes on snowshoes — would run in front, followed by the team; while another would run behind the sledge, holding in his hand one end of a long thong, the other end being tied to the

[1] To a sledge intended for passengers a high netted back, made of sticks and strips of leather, is attached.

[2] I knew a certain Yakut, Nikolai Sleptsoff by name, who lived on the border of the forests, on the Kolyma tundra, and who in the spring was driving a dog-team over the open tundra, and fell ill with snow-blindness. Unable to see the trail, he could not drive, and he let the dogs go, in the hope that they would take him to the village. All at once he felt that the dogs had gotten off the trail and into the soft snow. He got off in order to feel for the trail with his feet; but the dogs, probably roused by some beast that passed by, ran away with the sledge, and left the blind Yakut alone in the tundra. Sixteen days he lay there, subsisting on melted snow. The Reindeer Yukaghir found him in a dying condition, and cared for him until he had regained his strength. The dogs and the sledge were found by the relatives of the Yakut, who went in search of him. They had strayed far away from the tundra, into the forest. The dogs, entangled in the bushes and in their own harness-straps, had died there.

1: Jochelson E-5 (1900-01) 1908 Ry4 Koryak Ry4

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back of the sledge, to prevent the dogs, which are not directed by shouts, from losing the trail, and to stop them whenever they might try to run away.

The Russian immigrants, although they have improved the local sledge, and have adapted it and the whole method of dog-driving to the new requirements of transportation, have nevertheless kept every feature required by local conditions. Thus the narrowness of the sledge has been preserved, which is necessary on account of the absence of roads, and the lashings by means of which all parts are held together. These give the sledge not only strength, but also elasticity, which enable it to resist the jolts that would break a sled joined with wooden pegs or iron nails.

In Whymper's book "Travels in Alaska,"[1] we find an account of Russian-Indian dog-driving on the Yukon River. It is to be regretted that it contains no detailed description of the sledge and harness; but it states that five dogs were harnessed to each sledge, that the sledges carried freight only, and that the men went on snowshoes. To judge from the illustrations, as far as they can be made out, the sledges were constructed somewhat like the East Siberian type. They had neither vertical nor front bow. The dog-harness, too, is apparently like that of eastern Siberia. The dogs are placed abreast, after the manner of the Eskimo.[2]

We have already seen that where there are few dogs in a team, the men usually walk, or even help draw the sledge. The manner in which the driver sits on the sledge varies in different regions. All the tribes using the sledge of the East Siberian Russians sit sideways on the right-hand side near the vertical bow, which is held with the left hand, while the shaft of the brake is held with the right. Thus the driver, without letting go of the bow, often jumps off the sledge and runs along, urging the dogs on with a shout, supporting the sledge on slopes, or pulling it aside from stumps, hillocks, and other obstacles on the trail. This sledge is also convenient for carrying passengers who sit in the back part of the sledge, their feet stretched forward, or who lie stretched full length under a blanket. The Gilyak sit astride of their light sledges, which have no bow, and are peculiar in that their runners turn upward both front and rear.[3] The dogs' labor is lightened by decreasing the surface of friction; but, on the other hand, the sledge sinks more easily into soft snow. Bogoras says that the driver of the ancient Kamchadal sledge sat astride it;[4] while Krasheninnikoff, in whose day the Kamchadal still employed the ancient type of sledge, says, "They sit on the sledge with their feet hanging down its right side; and to sit astride the

[1] See Whymper, Alaska, Reisen und Erlebnisse; illustrations on p. 188 and on titlepage.

[2] The photograph of a sledge of the Alaskan Eskimo from St. Michael in Nelson's work (Plate LXXV) strongly resembles the illustration on the titlepage of Whymper's book.

[3] See Schrenck, II, Plate XXXVI, Fig. 1; Sternberg, The Gilyak (Ethnographical Survey [Moscow, 1904], Part I, p. 19).

[4] Bogoras, The Chukchee, Vol. VII of this series, p. 100.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

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sledge is deemed a great sin, for thus the Kamchadal women sit on it.[1] On the other hand, Steller relates that the Kamchadal sat more frequently on one side of their sledge to be able to jump down quickly in dangerous places, but sometimes when driving on a smooth plain they sat astride.[2]

231

TREATMENT OF THE DOG. *Feeding.* — The northern driving-dog, being a carnivorous animal, requires for its nourishment the same food as man. This has the advantage that the procuring and storing of food for both man and his domestic animals may be attended to at one and the same time and place. On the other hand, an abundant supply of animal food is required: hence dog-breeding is possible only on the seacoast or near rivers rich in fish. Besides, dog-breeding necessitates settled habits, as it requires large stocks of animal food for the winter, when sea-hunting ceases, as is the case in the territory occupied by the Koryak. The main food of the Siberian dogs consists of fish. On the coast, fish is caught in summer in great quantities, and is conveniently prepared for winter supplies. The Koryak dogs, too, prefer fish to any other kind of animal food. The principal fish caught by the Koryak is the dog-salmon (*Oncorhynchus keta*). It serves also as the staple food for dogs. In part the dogs' food is supplied by the small fish uyo'k (*Salmo socialis*). Dog-salmon dried in the sun is fed dry to the dogs during journeys. The skeleton of the dog-salmon, too, on which small pieces of meat remain after the soft parts have been removed for drying, supplies food after being dried in the sun. When at home, a thin soup for the dogs, made from the bones and heads of dog-salmon, dried uyo'k, and other fish-offal, is cooked in an iron kettle. Into this soup pieces of seal-blubber are sometimes thrown. The soup for the dogs, when ready, is cooled a little by pouring it into wooden or seal skin buckets (Plate XXVII, Fig. 1; see also Fig. 104), which are then carried out of the houses on the backs of the women by means of head-bands. As the food for the dogs is prepared of those parts of fish which decompose most rapidly during the summer and autumn, a strong stench fills the houses while it is being cooked. During our residence in the underground houses of the Koryak, this stench from the dogs' food caused us the greatest annoyance. The dogs are fed outside of the house. Plate XXVII, Fig. 1, shows two women pouring the warm soup, which is of the color of iron-rust, from wooden buckets into a long wooden trough. Before feeding, children untie those dogs, which for some reason are tied up. Impetuously the dogs make for the trough, and furiously begin to lap up the soup, dipping their snouts into the liquid up to the eyes, searching for the more substantial solid portions of the food. Fights are rare among the dogs while feeding, for they well know that the dog that starts a fight will be struck over the head by the women or children who supervise

[1] See Krasheninnikoff, II, p. 81.

[2] See Steller, p. 371.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

231 to a sledge along with trained dogs, and driven over a short distance, and
171 then put back into the ditch." Thus they were often taken out of the hole to be trained for driving. Only after they had gone a long journey, and after they had become accustomed to being harnessed to a sledge every time they were taken out of their hole, were they tied to the posts under the storehouses with the older dogs. The Koryak also begin to break pups when they are six months old. They are first kept tied to a line. Being used to running about free, they are impatient when tied up. They howl and whine, and are overjoyed when hitched to the sledge. Most of the puppies display such eagerness to run, that they are driven a short distance only to prevent over-exertion.

Pups born in spring or summer are put in harness with the coming of winter; but those born in autumn or winter are not trained for driving until the end of winter or spring, and are not used for driving until the following autumn.

231 According to Schrenck,[1] the Gilyak do not use female dogs in harness;
but all other dog-breeders of East Siberia with whom I came into personal
492 contact, between the Lena River and Bering Sea, prize draught-bitches very highly. They are weaker than the males, but they surpass the latter in zeal, and perform their tasks more earnestly and diligently. Sluts, in addition, often exhibit more aptitude to act as "leaders" than do the males. Often a bitch is placed among the front pairs to induce the ungelded males to try to reach her and thus pull their lines well. No special care is given to pregnant sluts. They are usually harnessed up to the moment of delivery; but very often the women watch over them, and do not allow them to be hitched up. Should a slut deliver her pups during a journey, far from human habitations, the young ones are doomed to perish. One night when in camp on the snow, on our way from the coast village Kamenskoye to the Reindeer Koryak of the Palpal Ridge, a slut of one of the drivers who carried my freight was delivered of pups at night while in harness. It was bitter cold and windy. The slut burrowed in the snow, and, shivering with cold, lay over her young in the hole she had made. In the morning, when we had sipped our tea by the campfire and began to prepare for the journey, the cruel master took the slut off from her puppies and harnessed her with the other dogs to his sledge. The puppies remained in the icy hole: the snow, which melted from the heat of the slut and her pups, froze. Two of the pups had died from the cold, while the remaining two were yet moving, but soon froze to death. The wretched slut lagged for a time behind the other dogs, but soon began to keep pace with them.

492 If a dog becomes so ill on a journey that it can no longer run, it is

[1] See Schrenck, II, p. 167.

Jochelson E-5 (1900-01)1908 RY4 Koryak RY4

492 unharnessed and abandoned in the wilderness. Nevertheless I had occasion to see that favorite dogs whose paws had been cut by the hard snow-crust, so that they could not run any longer, were taken on the sledge until the next camp was reached.

231 In spring, when driving with dogs is no longer possible, the sledge is suspended under the platform of the elevated storehouses to prevent the summer rains from drenching it. The dogs are set free, and from that time on they are given no food. Until fishing-time begins, the dogs content themselves with hunting mice, marmots, and other small animals in the tundra. When the fish ascend the rivers to spawn, the dogs begin to hunt for them in shallow places in rivers and at low tide on the seacoast. When fish are plentiful, they eat only the heads, and leave the bodies. The small fish uyo'k enters the small bays to spawn in such masses that after high tide a thick layer of roe remains on the shore. The Koryak do not eat it, but it attracts bears. The dogs are also very fond of it. In summer, while fish is abundant, dogs also indulge in vegetable food. They pluck off berries, principally sweet ones, like the bleaberry (*Vaccinium uliginosum*), cloud-berry (*Rubus chamæmorus*), and the fruit of the sweet-brier (*Rosa rubiginosa*). In all probability, these berries serve rather as a laxative in case of disordered digestion induced by excessive use of food, than as nutriment. I have had repeated occasions to see dogs eat herbs as an emetic. After having chewed and swallowed a sufficient amount of grass, the dog begins to vomit. Then he chews and swallows more grass. During the summer the dogs grow fat, and by autumn they are of well-rounded and handsome form. It is hard to recognize the same dog in autumn and in spring. After the labors and privations of winter, the dog has a surly appearance. It grows so thin, that the bones are seen through the skin, its movements are slow, and the hair, while being shed, hangs down in long tufts.

At this season the dog is subject to various diseases, some of epidemic character.[1] In rare cases the dog's food gives out toward spring, so that the teams are starving. In winter, if the supply of dog's food is early exhausted, the dogs have to be content with human excrement. Even well-fed dogs are fond of it, and are attracted by it as reindeer are by urine. When the dogs are hungry, it is not entirely safe to go to the privy without a stick in hand, owing to the fights among the dogs for possession of the excrement.[2]

If the dog has been poorly fed in winter, and is very lean in spring,

[1] On the diseases of dogs, see Bogoras, The Chukchee. Vol. VII of this series, p. 104.

[2] The poor polar Yakut of the Kolyma tundra, who live on the scanty proceeds of fishing in the lakes and go hungry in winter, give hardly any food to their dogs, which carry wood and water and are used on short journeys. In summer their dogs are left to themselves and go hunting, and in winter their food consists mainly of human excrement. These Yakut felt insulted when I fed meat to my dog. "Thou givest thy dog food befitting the most honored men," my Yakut interpreter once said to me reproachfully. The dogs of these Yakut are of very small size, and are the most wretched specimens that I ever saw among driving-dogs. I have spoken before of the contempt with which the Yakut treat dogs, which are considered as unclean animals.

1: Jochelson E-5 (1900-01) 1908 Ry4 Koryak Ry4

781 231 262 idea of a sacrifice[1] includes the conception that the deity or spirit will make the same use of the offering or of its soul as does the person offering the sacrifice. Even the many colored rags or other trifles which the Siberians and also other tribes offer to the deities or spirits are given to them either as ornaments or as other utilities or as substitutes for costlier things. The Chukchee kill dogs for food, but they do not eat sacrificial dogs, says Bogoras.[2] This last statement is not in accord with the fact that in general the Chukchee do eat dog-meat, for the flesh of those sacrificial animals which [281] are commonly used for food is usually eaten. Among the Koryak I saw the carcasses of sacrificed dogs skinned and cast out on the tundra.[3] In this case it must be assumed that the dog is sacrificed as a draught-animal or for the sake of its fur, as the Siberian natives hang on trees the skins of fur-bearing animals, which serve as offerings to evil spirits, while the carcasses are thrown away. Among the Yakut, the favorite offering to those divinities and spirits to whom no bloody sacrifices are offered, is hair from the horse's tail or mane. In this case the hair cannot be a substitute for the horse, but must have the significance of an object which is valuable in itself in Yakut domestic economy, nets, cords, and rugs being knitted of horsehair.

231 Character and Number of Dogs. — The Koryak dog is useless as a watch-dog. In the first place, it is afraid of man, and runs away even at the motion of a hand. It hardly barks at all,[4] and thus does not warn its master of danger. Three times I took Arctic dogs, that I had reared myself, to civilized regions. One of them I took as far as Yakutsk, the other two I carried to European Russia. Despite certain changes in their character owing to my method of rearing, they showed no hostility to strangers.[5]

231 492 It is curious that when in harness the dog's character seems to change completely. In nearly all books of Arctic travels are found descriptions of the passionate excitement to which this tamed beast of prey is roused at the moment of starting on a journey. While travelling, the dogs not only attack other dogs, but even men whom they encounter. To meet a team of dogs rushing along is fraught with great danger for a person travelling on foot, who is obliged to turn off the trail. On meeting another team, the dogs engage in a fierce fight if one of the drivers does not turn aside. Should harnessed

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[1] The sacrifice of the totem animal or the divinity itself — made, according to the views held by some recent writers, in order to renew nature — must be excepted from this statement.

[2] Bogoras, The Chukchee, Vol. VII of this series, p. 301.

[3] See Part I, p. 95.

[4] Some dogs do not bark at all, and are as silent as if they were dumb. Those that bark do so rarely. Their bark is a drawl, and turns into a whine.

[5] Living far away from Yakutsk, I kept a horse of my own for travelling. My dog grew so attached to it that it would always lie down near it. One night when two Tatars from the Kazan Government who had been banished to the Yakutsk district for highway robbery, and who were my neighbors, stole the horse, the dog followed it in silence. The Tatars took the horse into the woods and there tied it up, intending to kill it for its meat the same evening; but, following the tracks of dog and horse, I found them and took them back home.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

reindeer meet with a dog-team unawares, they are inevitably torn to pieces. The dogs pay no attention to their master's shouts and club. The only way of stopping the carnage is to knock the dogs on the head and stun or kill them. While in camp in the wilderness, the dogs which lie tied up near the sledge do not allow strangers to go near it, perhaps because they know that their food is on the sledge, for at home they do not attack or molest strangers. Noticeable changes of character took place in my dogs which I had brought up myself, partly due to the different treatment, partly owing to their new surroundings. It cost a great deal of trouble to train them to discriminate between domestic animals, which they had never seen, and game which they were permitted to hunt. They used to catch chickens, ducks, geese, sheep, calves, foals, and cats all in the same fashion, by the throat. More than once I had to pay for the harm they had done. Even after they had finally become accustomed to domestic animals, atavistic enmities persisted. Their feuds with cats had no end, and they would always attack hogs; but from the very start the latter would drive them off, and the dogs came to be afraid of them.

In imitation of our dogs, they learned to bark, but they never barked at a person. On the contrary, they lost all fear of human beings, and took kindly to everybody. On the other hand, their attachment to their master and his friends was sufficiently firm. The dogs recognized me after an absence of several weeks, and boisterously expressed their delight. The Koryak dogs, on passing into new hands, become indifferent to their former master in a few days, as soon as they become familiar with their new comrades and their feeding-trough. At first, when in unwonted places, my dogs would sometimes fall to howling, which casts a feeling of melancholy and despondency over a traveller whom fate brings into a hamlet where a chorus of a hundred dogs begins its interminable evening concerts. After a few months' sojourn in civilized surroundings, however, they gave up their habit of howling.

An idea of the number of dogs kept by the Koryak may be formed on the bases of a census taken by me in 79 households of maritime Koryak of Penshina Bay (see table on p. 522).

The average per household is 10 dogs. The figures quoted are more or less constant. Although the dogs are very prolific, the number of dog-sacrifices equals or even surpasses the increase. If in spring, as frequently happens, an epidemic of hydrophobia or another contagious disease a symptom of which is an affection of the nerve-centres, rages among the dogs, many households lose all their animals. Then the people, when moving from their winter abode to their summer dwelling, have to drag their belongings along, or assist their dogs in drawing the sledges. A travelling family of this kind is represented on Plate XXVI, Fig. 2. One dog is harnessed to each sledge, and the women draw with them, while the men carry huge bundles on their shoulders.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

head of such a spear (a'ut) is shown in Fig. 136, *a*. It is 15 cm. in length. The lower narrow part of the a'ut is fitted into a hollow at the thicker end of the wooden spear-shaft, which is wound with a thong. When the whale is dead, its carcass, which is studded with harpoons and spears, is taken in tow by all the boats that have participated in the hunt, as shown in Fig. 247, and is hauled to the village.

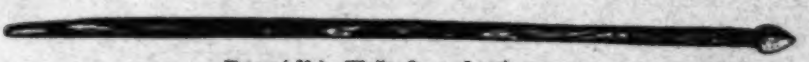

Fig. 93 (¹⁄₁₁). Whaling-Spear. Length, 224 cm.

Krasheninnikoff relates[1] that in his time the people of Alutor caught whales in the bays in enormous nets made of smoke-dried walrus-hide thongs as stout as a man's arm.[2]

White whales *(Delphinapterus leucas)* are hunted in the same way as thong-seals. The white whale (Russian belukha [бѣлуха]; Koryak, yiyi'ñin), too, comes into the bays and river-estuaries with the flood-tide in pursuit of fish, and goes back to the open sea with the ebb-tide. The full-grown white whale measures four metres and upward in length. Not infrequently it runs into the nets set for catching thong-seals. Both sealing-harpoons with iron heads and whaling-harpoons with stone heads are used in hunting white whales. When the white whale is worn out from wounds, it is despatched with a stone spear in the manner described above. If the white whale does not hurry to return to sea with the ebb-tide, while the water is still high, the hunters block the river-mouth in their kayaks, and drive them back into the river by means of shouts and by striking the water with their oars until the estuary becomes shallow and the white whale remains almost high and dry. It is then easily killed with rifles and spears. In this way the Koryak sometimes shut whole shoals of white whales within the river-mouths, as was the case in the summer of 1899, when the Koryak hemmed in sixteen white whales in the estuary of the river Ovekova. Still the number of these animals caught is insignificant in comparison with the enormous quantities found in the Koryak waters. Thus during the summer of 1900 the inhabitants of Kamenskoye caught nine white whales; those of Itkana, six; and those of Kuel, only two. Plate XXVIII, Fig. 2, shows how the inhabitants of Kuel haul a white whale caught in seal-nets on dog-sleds over the coast-ice to the settlement. This photograph was taken in the beginning of October.[3]

[1] See Krasheninnikoff, I, p. 421.

[2] In looking over the annual reports of the commander of the district, in the Gizhiga archives I found some data as to the number of whales killed by the Koryak in certain years. Judging by other statistical data contained in these reports, these numbers are doubtless also below the actual. A catch of two whales is recorded for 1848 in Paren, and of two whales in Kamenskoye; for 1856, three whales in Kamenskoye; for 1886, six whales in the whole of Penshina Bay.

[3] See description of festival, Part I, pp. 69—77.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

I will remark here that seals are hauled from the shore to the village over the ground or ice by means of a thong, which is usually passed through a slit running from under the lower jaw through the mouth. I did not see among the Maritime Koryak of Penshina Bay any small sleds such as are used by the Chukchee and Eskimo for conveying home seals.[1] 492

In the Bays of the Sea of Okhotsk there are no walruses and sea-lions, nor any ribbon-seals *(Histriophoca fasciata)*. Old people in the village of Itkana told me that they knew of one case of a walrus being caught in Penshina Bay. How reliable this information is I do not know. The walrus in Bering Sea has decreased very much in numbers owing to its incessant unlawful pursuit. They are hunted by the Koryak in the same way as seals, — mainly with harpoons. In former times the Karagha estuary and the bays of Karagha Island were favorite localities for walrusing. 225 [136]

Hunting of Land-Game. — The wild reindeer and the mountain-sheep or Kamchatka big-horn (*Ovis nivicola* Eschholtz) are the only wild land-animals killed by the Koryak for food. The elk and the musk-deer, which are met with on the southern coasts of the Sea of Okhotsk and west of the Stanovoy Mountains, are unknown in the Koryak territory, at least nowadays. 224 136

The hunt of wild reindeer is unimportant; and there are few hunters who make a specialty of this pursuit, as is the case among the Yukaghir and Tungus. Besides, the wild reindeer in the Koryak territory are not numerous. The domestic reindeer, for which the best pastures are selected, has pushed the wild herds to the north or to the less favorable pastures of the mountain-chains. They are found in small herds only, on mountain-tops in summer, and in the tundras and river-valleys in winter. On the Palpal Ridge a wild reindeer is found which crosses the Anadyr River and lives in summer on the coast of the Arctic Ocean. Small herds of the migratory wild reindeer reach the most southerly parts of the Koryak territory. The Maritime Koryak rarely hunt the wild reindeer. It is pursued principally by the inhabitants of northern Kamchatka and of the Parapol Valley, and particularly by the Koryak on the Palpal.[2] Still the hunt is not carried on regularly. In domestic life, as well as in trade, the wild reindeer is of slight importance only. Skins of wild reindeer are not exported from Gishiga; while among the number of reindeer-skins exported from the Anadyr and the Kolyma Rivers the skins of wild reindeer occupy an important place,[3] since on these rivers many are killed during their migrations to the north and back. [439

Like the wild goat, the mountain-sheep is fond of rocky mountain-tops, where it feeds on alpine marshes. It is especially numerous in the Kam-

[1] See Bogoras, The Chukchee, Vol. VII of this series, p. 107.

[2] In regard to the methods of hunting wild reindeer compare Bogoras, The Chukchee, Vol. VII of this series, pp. 132–136; Jochelson, Sketch of the Hunting Pursuits and Peltry Trade in the Kolyma Country (St. Petersburg, 1898), pp. 42–48.

[3] See Jochelson, Sketch of the Hunting Pursuits and Peltry Trade in the Kolyma Country, p. 38.

1: Jochelson E-5 (1900-01) 1908 RY4 Koryak RY4

326 [301] [492] Two iron bracelets are represented in Fig. 147, *a* and *b*. Small iron bars, finished and ornamented by means of files, are hammered cold into bracelets. There are also twisted iron bracelets, which are made of iron rods heated red-hot and twisted with tongs. In Fig. 147, *c*, is represented an iron needle-case with iron pendants. For dog-harnesses the blacksmiths forge toggles, swivels, rings, and small chains as substitutes for those formerly made of bone. Files for smoothing iron are bought by the smiths from traders or in the Government depot. Sometimes they themselves make files of iron bars by means of imported files. The Koryak blacksmiths do not make iron nails, but they do manufacture iron rivets for patching kettles and other broken utensils.

Fig. 147. *a* ($\frac{1}{2}\frac{1}{2}$), *b* ($\frac{1}{2}\frac{1}{2}$), Iron Bracelets; *c* ($\frac{1}{1}\frac{1}{2}$), Needle-Case (length, 13 cm.).

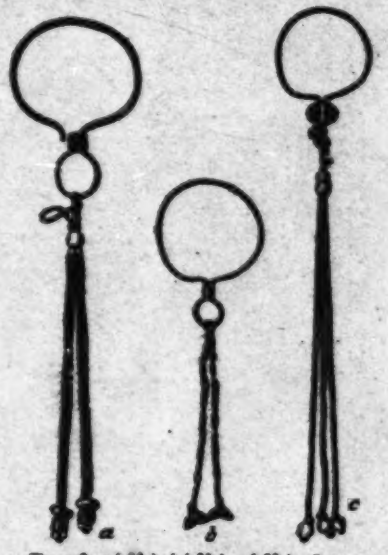

Fig. 148. *a* ($\frac{1}{2}\frac{1}{2}$), *b* ($\frac{1}{2}\frac{1}{2}$), *c* ($\frac{1}{2}\frac{1}{2}$). Brass Ear-Ornaments. ½ nat. size.

326 301 Work in Copper, Brass, and Silver. — The Koryak work copper and brass in the cold state only. The production of objects wrought in this way is limited. As material for the work, imported sheet-brass, copper wire, and broken copper dishes, teapots, and kettles, are used. Of copper or brass wire are manufactured large ring-shaped ear-ornaments decorated with iron or brass pendants, or with many colored beads which are strung on sinew-thread. Fig. 148 shows three such ear-ornaments. The one marked *a* represents an open ear-ring prior to passing it into the ear; and *b* and *c*, closed ear-rings as they hang in the ears. Identical forms of ear-ornaments are found among the Tungus and the Amur Gilyak. The shape of these ear-rings, and their manner of manufacture, have undoubtedly been learned by the Koryak from the Amur tribes through the Tungus of the Okhotsk district, or they are manufactured in imitation of ear-rings brought to Gishiga from Vladivostok. The

11: Kennan--185-186 T-3 (1865) 1870 Koryak-1-2
116, 233, 283, 492 Reindeer

"Snatching hurriedly a few bites of hard bread and bacon by way of breakfast, I donned fur hood and mittens, and crawled out through the low doorway to see how twenty trained deer were to be separated from a herd of four thousand wild ones.

Surrounding the tent in every direction were the deer belonging to the band, some pawing up the snow with their sharp hoofs in search of moss, others clashing their antlers together and barking hoarsely in fight, or chasing one another in a mad gallop over the steppe. Near the [186] tent a dozen men with lassos arranged themselves in two parallel lines, while twenty more, with a thong of seal-skin two or three hundred yards in length, encircled a portion of the great herd, and with shouts and waving lassos began driving it through the narrow gantlet. The deer strove with frightened bounds to escape from the gradually contracting circle, but the seal-skin cord, held at short distances by shouting natives, invariably turned them back, and they streamed in a struggling, leaping throng through the narrow opening between the lines of lassoers. Ever and anon a long cord uncoiled itself in air, and a sliding noose fell over the antlers of some unlucky deer whose slit ears marked him as trained, but whose tremendous leaps and frantic efforts to escape suggested very grave doubts as to the extent of the training. To prevent the interference and knocking together of the deer's antlers when they should be harnessed in couples, one horn was relentlessly chopped off close to the head by a native armed with a heavy sword-like knife, leaving a red ghastly stump from which the blood trickled in little streams over the animal's ears. They were then harnessed to sledges

in couples, by a collar and trace passing between the forelegs; lines were affixed to small sharp studs in the headstall, which pricked the right or left side of the head when the corresponding rein was jerked, and the equipage was ready."

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

sea hunting with reindeer-breeding. The remaining 7 groups of Koryaks—the Kamentsy, Parentsy, Itkantsy, Apukintsy, Kereks, Karagintsy and Palantsy—also maintained complex economies, with one or another occupation predominating.

Koryak reindeer-breeding was of two types. The first type—the keeping of large herds—existed among the Chavchuvens. In the early part of the 20th century, a small group of reindeer-breeders owned large herds, accounting for up to 80% of the total number of head. In the area of the Penzhina River, some reindeer-breeders owned 2-3 herds, adding up to as many as 10,000 reindeer. The pasturing of the large herds owned by the rich Koryaks was done by poor Koryaks who owned only a few reindeer or none at all, and were compelled to tend their master's herds in exchange for food and clothing.

The reindeer provided the principal item of the reindeer-breeders' diet—meat, and the basic material for clothing and housing—hides, as well as tendons, of which thread was made. At the same time, the reindeer was to the reindeer-breeders the sole means of transportation. Hence, the entire life of the reindeer-breeding Koryaks was adapted to the demands of their basic occupation. In winter, the herd grazed near the encampment. As soon as the pasture was exhausted, the master drove out in a light sled, similar to that of the Chukchi and harnessed to a pair of deer, to search for another pasture. After that, the entire camp migrated to the new site, and the herdsmen drove the herd to the new pasture. Such migrations took place 4-5 times during the winter. In the spring, before the calving (in April), the females were separated from the rest of the herd. Calving time (May) was the hardest period for the reindeer-breeders. The newborn calves had to be protected from predators—wolves, foxes, wolverines and ravens, and also kept from freezing. At this time, the herdsmen had no rest either by day or by night. They were helped by members of their families, and even old men and children took part in guarding the herd in encampments where the human population was small. Afterwards, the herdsmen drove the herds for the whole summer into the mountains, which abounded in pasturelands. The correct choice of the summer pasture determined the welfare of the herd for the entire year. Summer pasturing required from the reindeer-breeder great skill, experience, and knowledge of the tundra and the reindeer's requirements. The encampment was situated at this period in a summer site, usually on the bank of a river abounding in fish. In autumn (at the end of September and beginning of October), the herdsmen brought the herd to the encampment. Meeting of the herd—one of the principal holidays of the reindeer-breeders—was attended by numerous rituals. After the first snow, the herd and the camp migrated to the winter range.

The herding was done without dogs, which the Koryak reindeer-breeders did not use. Nimble feet, alert eyes and a leather lasso requiring great skill of the herdsmen—these were the means at his disposal to protect the herd from snowstorms and wolves in winter, from foxes and ravens in spring, during the calving season, and from mosquitoes and gnats in summer.

Another type of reindeer-breeding—that of small herds—existed among the Alyutortsy Koryaks. More than 50% of all the Alyutortsy kept reindeer, but few had herds as large as 1000 head. A characteristic feature of Alyutor reindeer-breeding was the use of dogs as the principal sled animals. Each household had one, two, three or more teams. Reindeer were used only for short trips without loads.

This type of reindeer-breeding was usually combined with sea hunting and fishing. All the Alyutortsy, with rare exceptions, went out on sea hunts, especially in spring, when they hunted on drifting ice floes. In summer,

In summer, during the fish-runs, all reindeer-breeding Alyutortsy migrated to the mouths of rivers, where they lived with their sedentary kinsmen and worked with them, preparing stocks of fish for the winter. The reindeer herds remained at this time in the care of herdsmen—the boys of the family. This second type of Koryak reindeer-breeding originated much later than the first.

The hunting of sea animals (various species of seal and white whale) was the principal occupation of the northern sedentary Koryaks, who lived on the coast of Penzhina Bay: Kamentsy, Parentsy, Itkantsy. It also played an important role among the rest of the sedentary Koryaks: the Kereks, Apukintsy, Palantsy, Karagintsy, and sedentary Alyutortsy.

Sea hunting was done during two seasons: spring and fall. The spring season began in mid-March and ended in the latter part of June.

The hunters, armed with rifles and spears, drove out in parties of 78 men, or more, by dogsleds on the sea ice, 5 to 10 kilometers from shore. The seals, which climbed out on the ice, were shot with rifles. The kill was loaded on the sled, and the hunters returned to their village either the same or the following day, after a night on the ice. In a party of 78 men, 2 usually had guns, while the rest brought in the catch, loaded it on the sled and transported it; some were simply onlookers. In May, when open water appeared among the ice floes, sea hunting was done in baydars (skin boats).

The fall season began in mid-September and ended in the latter half of November. The fall hunting was also done in baydars and barkasy [flat-bottomed plank boats]. The animals were caught with nets of sealskin strips.

Long ago, the Koryaks hunted whales. According to legends and literary sources of the 18th century, the hunt was conducted with a huge net, woven of thick strips of leather. Large stones were used as sinkers. The net was attached to coastal cliffs and crags. Dozens of baydars, each with more than 10 hunters, armed with harpoons, sailed out into the sea. The hunters drove the whale into the net, in which it became entangled. The heavy sinkers made it impossible for the whale to swim out into the sea with the net. The hunters showered him with spears. Wounded and exhausted, the whale died, and the hunters joined forces to pull him ashore. The Alyutortsy also used joined boats instead of baydars in hunting whales.

The skins of sea animals were used for straps and boot-soles. The meat and blubber were eaten and stocked. The blubber also provided light. To the Kamentsy, Parentsy and Itkantsy, the products of sea hunting—blubber, skins, and sometimes meat as well—served as the principal media of barter with the reindeer-breeders, from whom they obtained deerskins and meat.

Fishing had long been the main occupation of the eastern sedentary Koryaks of the Bering Sea coast: the Karagintsy, the sedentary Alyutortsy and the Apukintsy. Fishing was also important to the western sedentary Koryaks—the Palantsy, and the northern ones—the Kereks—and somewhat less for the settled Koryaks on the Penzhina—Kamentsy, Parentsy and Itkantsy. Fishing was done throughout the summer and early fall season—from mid-June to the middle of September.

The most widespread method of fishing was by means of barriers. The river was fenced off from either bank with two barriers of stakes and twigs. At the place where they met, the fishermen attached under the water a chiruch (a sack-net) or a "muzzle," made of strips of wood, laths or twigs. Such barriers were set in shallow places, where the fishermen could work during shoal runs without boats or kungasy [sailboats]. The "muzzles" were emptied several times a day. During the heavy runs of fish (Siberian salmon and other migrating salmon species), the Koryaks moved to the mouths of rivers. Here groups of households combined into cooperatives and fished

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

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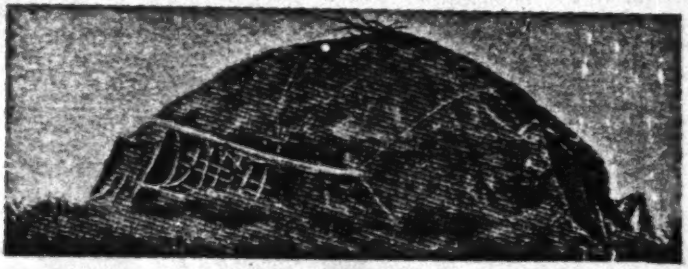

Reindeer-breeders' dwelling.

361 [172] fishing, or at river deltas. Kerek villages were small, consisting of only one or two dwellings. In the past, however, as seen from the ruins, they consisted of 10 to 15 dwellings.

179 342 Russian influence led to the appearance in the villages of the sedentary Koryaks of wooden frame houses as long ago as the middle of the last century.

Means of Transportation

492 493 [184] [171] The nomad Koryaks traveled by reindeer, the sedentary ones by dog-transport. The reindeer were harnessed to the sled; the Koryaks did not know of riding on reindeer. The reindeer sleds were similar to the Chukchi sled in construction. The light ones were arch-staved, with bent runners and a frame for sitting. The freight sleds were built in the same fashion, but more massively. Depending on the purpose of the freight-hauling sled, it was either surmounted by a hood (as in the sleds used for transporting children), or simply by a platform on poles (for carrying loads). There was also a special sled for carrying the frame of the dwelling, and so forth.

The light traveling sleds were usually harnessed to two reindeer; the freight-hauling sled was pulled by one reindeer. The reindeer were harnessed, not in front of the traveling sled, but on the left, so that the driver sitting in the sled could see everything ahead of him. When going downhill,

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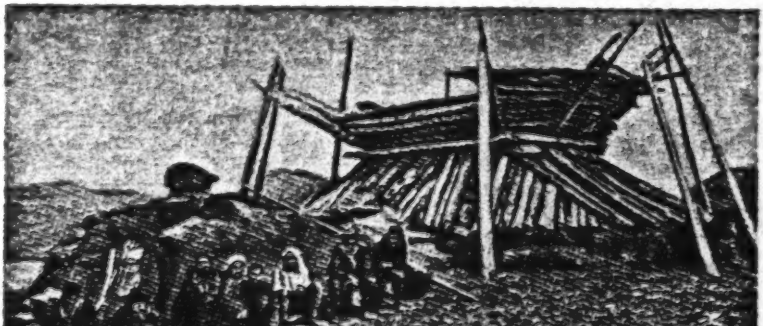
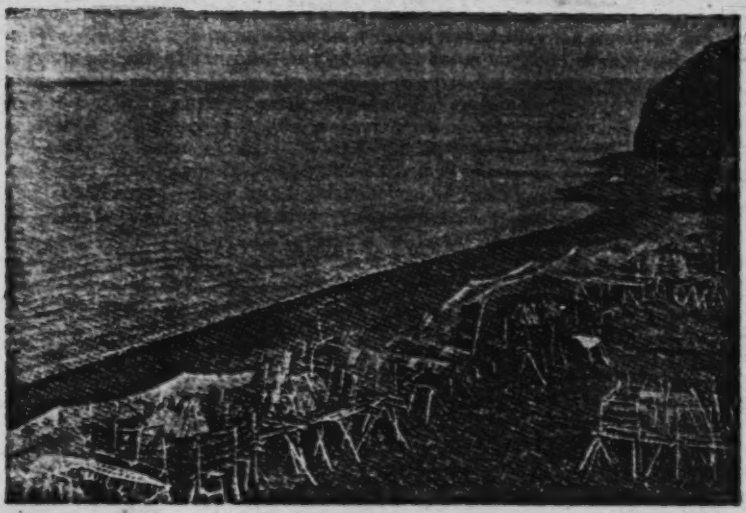


Dwelling of coastal Koryaks.

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4



Summer village.

the reindeer remained slightly behind the driver on the left, restraining the sled from slipping down too fast. The reindeer were managed with the help of reins and a whip with bone tips.

The coastal Koryaks and the reindeer-breeding Alyutortsy kept sled dogs. A full team usually consisted of 10 to 12 animals. For dog-travel, the Koryaks used the four-staved sled, common throughout Eastern Siberia. It was 2–2.5 m long, and 0.5 m wide. Its parts were fastened with leather strips and sharpened pegs inserted into holes, made especially to receive them. The dogs were harnessed tandem, in pairs. They were directed by voice, and braked with the aid of a staff (about one meter long) with an iron tip. The standard load per sled was 150–160 kg in addition to the weight of the driver (kayur).

The Koryaks learned horse-breeding from the Russians. Sedentary Koryaks (Palantsy, Karagintsy and southern Alyutortsy) kept horses, but they were used only in summer, as pack animals. In winter, they were left to their own devices, foraging for green fodder and often perishing of starvation, blizzards, frosts and wolves. Often the horses became so wild that their owner found it easier to walk dozens of miles with heavy loads rather than try to capture the horse.

For water transportation, the Koryaks used skin boats (baydars and kayaks). The Koryak baydar was similar to the Chukchi, but was considerably shorter and wider; its prow and stern were rounded. It was used by the Koryaks chiefly for hunting and fishing.

During the summertime, river transportation was by bat—boats hollowed out of thick tree trunks. They are extremely unstable in the water and require great skill of the helmsman, who steer with a long pole. Despite their untrustworthiness, these boats were also used by the Koryaks on the sea. In such cases, they were joined: two boats were linked with thick crossbars, leaving a space between them which was approximately equal to the width of one boat. Sometimes

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

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493
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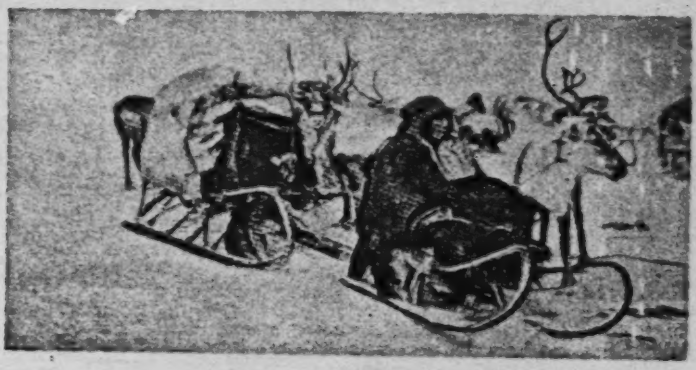

Light traveling sled and sled for transporting children.

501 boards were laid on top of the crossbars, and then the result resembled a raft.

291
237

Clothing

The Koryak dress is most similar to that of the Chukchi. All Koryaks used the skins of young reindeer for both summer and winter clothing. Other skins (dogs, foxes, wolves and wolverines) were used only to trim the upper clothing, and to make hats and mittens.

The basic clothing of men consisted of an almost knee-length fur shirt without a lengthwise opening and with wide sleeves; this was worn with fur trousers and footwear. The shirt was made with a cowl and a small breastpiece, or without a cowl, but with a wide collar, edged with a seam. A cord was pulled through the seam, drawing the shirt together at the neck. The collar was usually trimmed with dog fur; black fur was considered the most beautiful.

Travel garb was cut in the same fashion, but longer. It consisted of two separate fur shirts, of which one was worn with the fur inside, and the other, with the fur outside. It was usually made with a cowl and a small breastpiece.

[184]
[179]

The clothing was usually worn directly on the body; the coastal Koryaks were the only ones to wear it frequently over fabric shirts, acquired from the local Russians.

Trousers were sewn of reindeer skins. Footwear was made of suede.

Women's winter dress was a wide fur overall with sleeves. The trousers were tucked into the boots below the knee. Very often they were made of vertical strips of white and dark fur. Above the overall, the women usually wore a fur shirt. It was of the same cut as the men's shirts, but decorated with tassels and embroidery.

A characteristic feature of Koryak winter dress (men's and women's), which distinguished it from the Chukchi dress, was the patterned strip at the hem—the opuvan. This was usually made of reindeer fur, but of a different color from the rest of the garment; sometimes it was decorated with mosaic designs.

[531]

17:Antropova E-4 (no date) 1964 RY4 Koryak RY4

Preparation of seines. Korfa Motor-Fishing Station.

Motorized transport (cutters etc.) is widely used in summertime. In winter, dog and reindeer transportation are still important.

The general rise in the material well-being of the collective-farm Koryaks has been reflected in increased consumption of bought food products and other commodities. In the present Koryak diet important places are held by such food products as flour, cereals, sugar and other commodities bought in the local store. In recent years, bought urban-type clothing has become increasingly widespread, but side by side with it the Koryaks retain their national dress, especially their winter dress, which is well adapted to the severe climate of the okrug.

Cultural construction, launched after the organization of the okrug, has achieved marked results. Before the Revolution, the Koryaks were illiterate. In the two parochial schools which existed in the area in 1916 there were only 13 Koryak children. Wide school construction began from the very first years of the Soviet regime. In 1925, schools were opened in a number of villages. The school in the village of Tilichiki was reorganized into a boarding school for children of the nomads.

Before World War II, there were 30 Koryak schools in the okrug; in 1951 there were already 97 primary, seven-year and secondary schools (27 of these were boarding schools).

The personnel for the national schools is trained in the pedagogic school in the village of Tigil'. In the course of its existence, the school has trained more than 100 teachers, including Koryaks. Young Koryak students receive advanced teachers' training in Khabarovsk. A number of graduates of the Khabarovsk Pedagogical Institute work in the schools of the Koryak National Okrug. Among the students of the Department of the Peoples of the Far North at the Herzen Pedagogical Institute in Leningrad there are Koryak students who specialize in the languages, history and economics of the northern peoples.

23: Krasheninnikov N-3 (1736-40) 1764 Koryak

They yoke two

492 deer before every ſledge. The harneſs is ſomewhat like that they uſe for reins of the dogs; the harneſs of that deer which is on the right ſide being faſtened to the left ſide of the ſledge, and that of the deer on the left ſide to the right ſide of the ſledge. Their bridles and reins are ſomething like the collars of horſes. Upon the deer's forehead they have four little bones, made like teeth, but very ſharp, which are uſed as bits to pull them in when they run too faſt; for theſe ſharp bones piercing the ſkin ſtop them at once. The right hand deer only has theſe bones; for if that is ſtopped, the deer upon the left has not ſtrength to run away. The drivers ſit near the fore part of the ſledge; and if they want to turn to the right they only draw the rein, but when they would turn to the left they beat the right ſide of the deer. They drive them with a goad, which is about four feet long, having a ſharp piece of bone at one end, and at the other a hook: with the bone they prick the deer to go forwards, and with the hook they lift up the harneſs when it happens to fall down.

Travelling with rein-deer is much ſwifter than with dogs: good cattle will go 150 verſts a day; but you muſt take care to feed them frequently, and to ſtop often to allow them to ſtale; for you may kill them in one day, or at leaſt make them good
492 for nothing. Deer that are uſed for draught are bred to it, as
233 horſes. The male they geld, which is done by piercing the ſpermatick veſſels, and tying them tight with thongs. The rein-deer which the *Koreki* uſe for draught feed along with the others; and when they want to part them, they drive them all home; then crying aloud in a particular manner, the draught cattle ſeparate themſelves from the reſt; and if any of them ſhould remain, they are beat moſt unmercifully.

233 The ſettled *Koreki* have likewiſe ſome rein-deer, but very few, and thoſe ſuch as they only uſe for drawing. The *Tchu-*

kotſkoi

NS /488 cont./
492 development, also by the Russians, of the greatest and fullest use
484 of them and for the longest journeys, for instance, to the New Siberian Islands, etc., were found there along the Jana and Indigirka.

K 231 [361] [492] To the north of Kamchatka we find another Paleo-Asiatic people, the Koryak living in permanent sites along Penshinsker /Penzhinskaya/ Gulf and along the Bering Sea, who likewise have only the dog as a domestic and, at the same time, draft animal. I believe that I have already proved above (7) that

K 174 231 361

7. See pp. 481 ff.

formerly the ancestors of the now nomadic Koryak and the closely related Chukchee (the Onkilon) had permanent habitation sites and, in fact, earth yurts, just as they did, and, correspondingly, as fishermen, seal-hunters, etc., like them, they, too, may have had only the dog as a companion until they became acquainted with the domesticated reindeer, probably through the Tungus pressing in on them from the south and the west, and with it took up their present nomadic life.

G. Gi NS K 231 171 /489/ Thus, we must designate the dog, this oldest of all animals domesticated by man, as the only domestic animal and therefore, especially in its position as draft animal, as, so to speak, a characteristic form of the Paleo-Asiatic peoples, this oldest formation of peoples in northeastern Asia. Where, subsequently, another domestic animal appears among them, such as the reindeer among the nomadic Koryak and Chukchee in the case mentioned above, it is always a gift brought to them at a later period by a younger family of peoples with whom they came in contact.

E 231 171 174 Without doubt it may be assumed that the Eskimo, like other Paleo-Asiatic peoples, had the dog as their only domestic animal and used it in harness when they were still on their original Asiatic soil. With this domestic animal they crossed over to America, and there, continuing to live in the same way by fishing, seal-hunting, etc., they spread across the entire northern